DATA NETWORK MANAGEMENT

DATA NETWORK MANAGEMENT

- Data Network management
  - Status of Network
  - Monitoring Network
  - Centralized Control
  - Required for both NIPRNET and SIPRNET

DATA NETWORK MANAGEMENT

- ISO Network Management model defines five (5) <u>functional areas</u> of network management
  - Fault Management
  - Configuration Management
  - Accounting Management
  - Performance Management
  - Security Management

DATA NETWORK MANAGEMENT

- <u>Fault Management</u> – is associated with the process of detection, isolation, notification, and correction of faults encountered in the network.
  - Fault Detection is accomplished when devices send SNMP trap messages, polling, and Syslog Messages.
  - A management system alerts administrators so proper corrective action can be taken.

DATA NETWORK MANAGEMENT

- <u>Configuration Management</u> – deals with configuration aspects of network devices such as configuration file management, inventory management, and software management.

DATA NETWORK MANAGEMENT

- <u>Accounting Management</u> – covers the usage information of network resources.
  - Used in businesses primarily for billing purposes.
  - Used in the Marine Corps primarily to view the usage of a particular link.
  - Three elements for an accounting system
    - Data collection
    - Data Processing
    - Reporting Tool

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DATA NETWORK MANAGEMENT

- <u>Performance Management</u> – is the practice of monitoring and measuring various aspects of performance tracking availability and reliability to ensure overall performance is maintained at acceptable levels.

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DATA NETWORK MANAGEMENT

- <u>Security Management</u> – is focused on access to network devices and security related tools ensuring resources are accessible only to authorized individuals.

DATA NETWORK MANAGEMENT

- Data Network Management Tools
  - HP OPEN VIEW
  - CISCO WORKS 2000
  - WHATS UP GOLD

DATA NETWORK MANAGEMENT
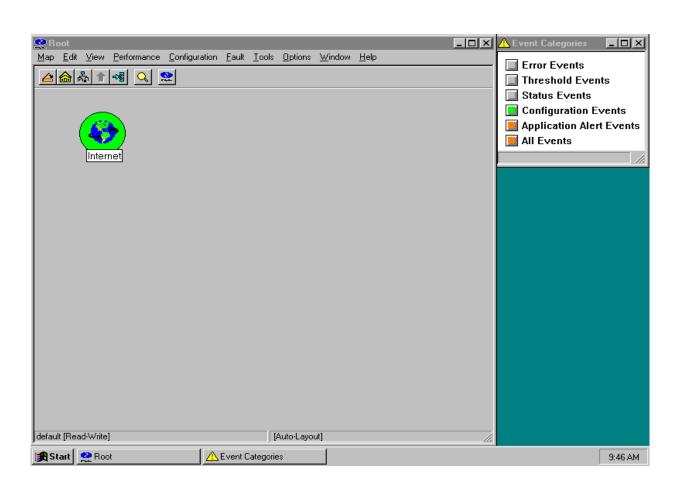
- HP OPEN VIEW
  - Is one of the authorized Marine Corps data Management Tool
  - Manages any vendor that supports SNMP
  - Automatically discover IP/IPX networks and monitor network devices.

HP OpenView

HP OpenView

HP OpenView

HP OpenView

HP OpenView

HP OpenView

HP OpenView

HP OpenView

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HP OpenView

HP OpenView

HP OpenView

HP OpenView

MSTP

HP OpenView

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HP OpenView

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HP OpenView

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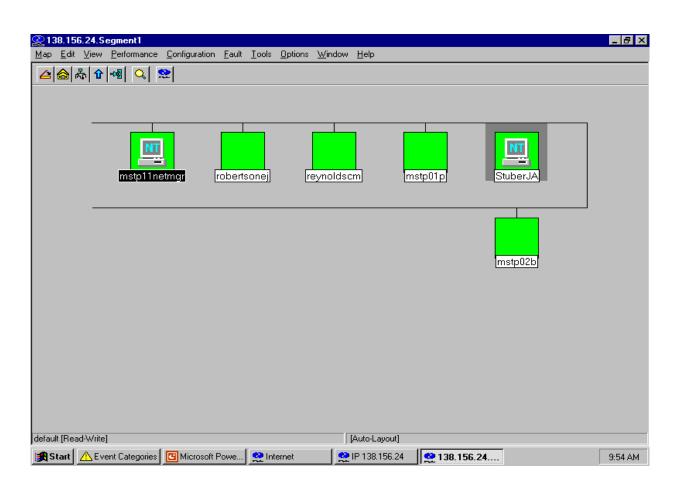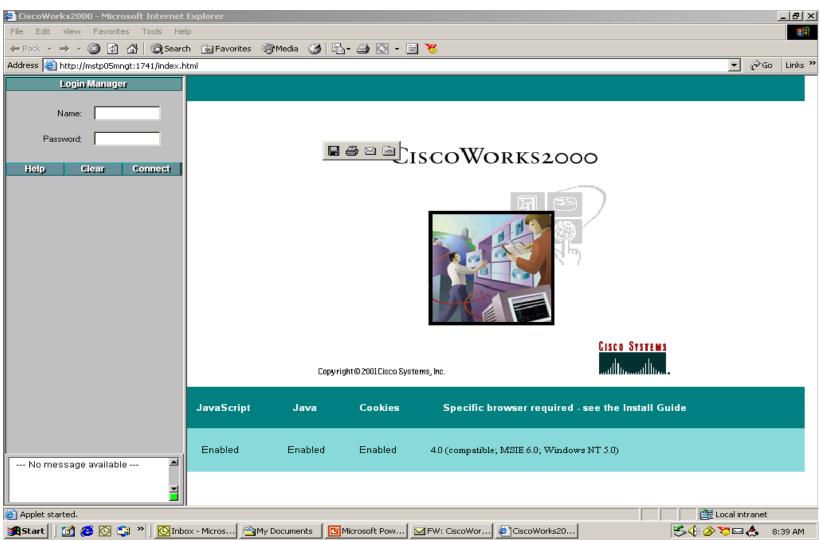# HP OpenView

DATA NETWORK MANAGEMENT

- CISCO WORKS 2000
  - Is an authorized Marine Corps data Management Tool
  - Comes bundled with the TDN Suite
  - Acts as a SNMP manager system
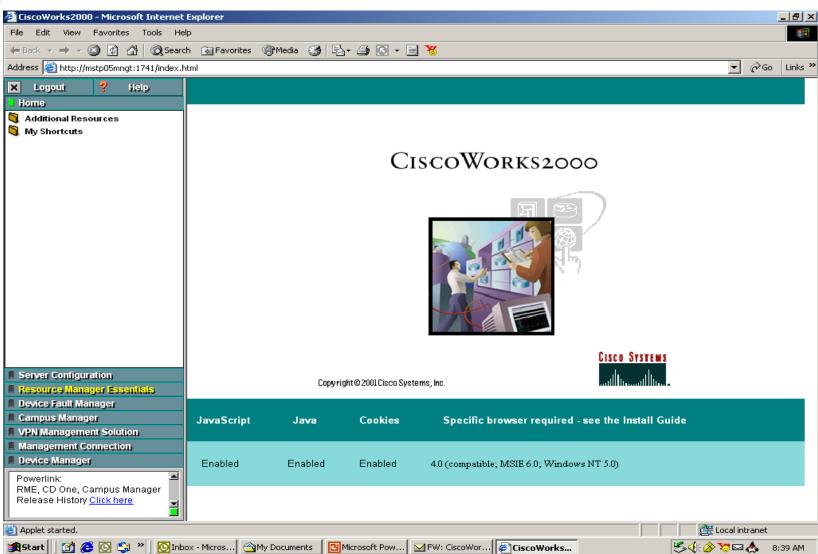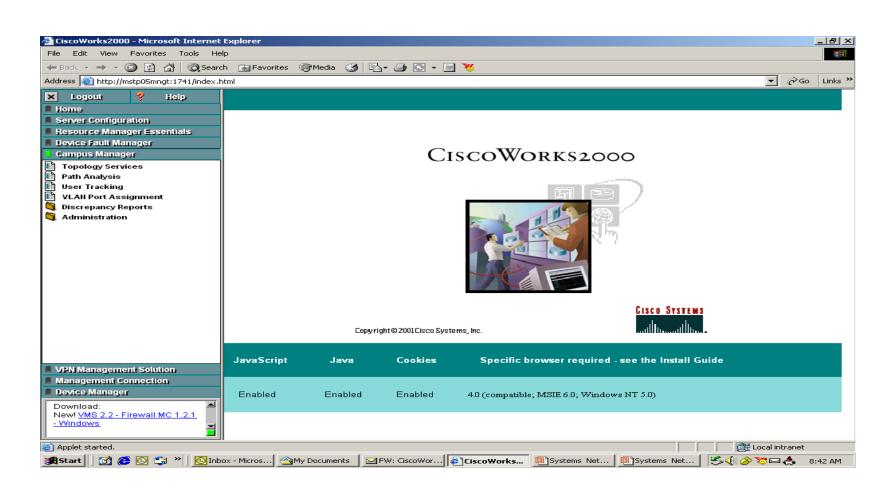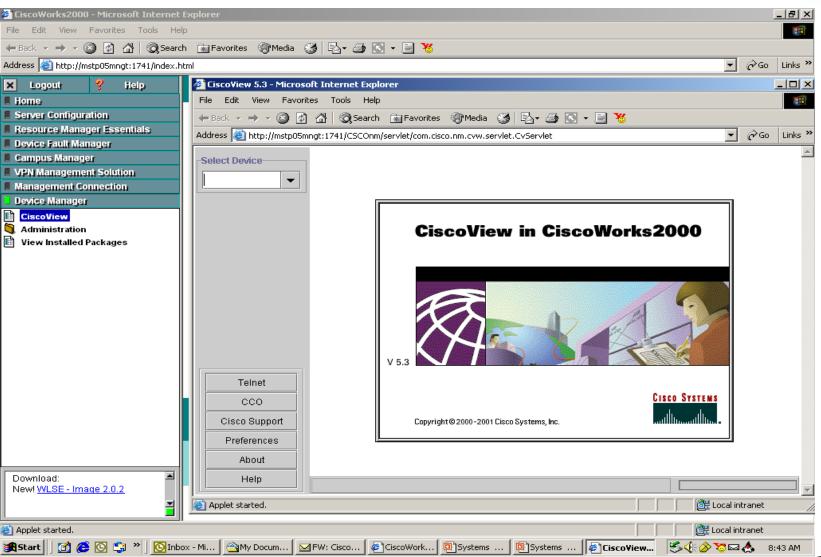 - Software image archive

Cisco Works

Cisco Works

Cisco Works

Cisco Works

Cisco Works

Cisco Works

Cisco Works

DATA NETWORK MANAGEMENT

- WHATS UP GOLD
  - Whats Up Gold Evaluation Software (11 MB)
  - Runs on Windows 98/Me/NT/2000/XP platforms.
  - Software will cease to function 30 days after installation.

DATA NETWORK MANAGEMENT
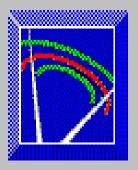
- WHATS UP GOLD (cont.)
  - Requires Authorization
  - For a comprehensive look at the features and operations of WhatsUp Gold, download the WhatsUp Gold User's Guide (requires Adobe Acrobat Reader 3.0).

DATA NETWORK MANAGEMENT

- WHATS UP GOLD
  - Ease of use.
  - Auto-discovery
  - User Friendly

WHATS UP GOLD

What's Up Gold

Easy-to-use tool for monitoring TCP/IP, NetBIOS, and IPX networks.

Initiates both visible and audible alarms

Provides a web interface so you can view network status from a web browser on any computer on the Internet.

Monitoring your network without any special training.

WHATS UP GOLD

- Mapping the Network
  - DICOVER AND MAP
  - SCANNING FOR SNMP
  - SCAN IP ADDRESSES
  - LOAD HOSTS FILE
  - SCAN NETWORK NEIGHBORHOOD
  - DRAW IT

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WHATS UP GOLD

Monitoring the Network

Continuously monitor the network

Initiate a single "poll" of the network- One poll of the network involves checking each monitored device in the network map. Each "check" consists of Whats Up Gold sending a poll request to a device and tracking the response.

WHATS UP GOLD

Monitoring the Network (cont.)

Determine how the device is monitored and define- what action to take if the device does not respond to a check.
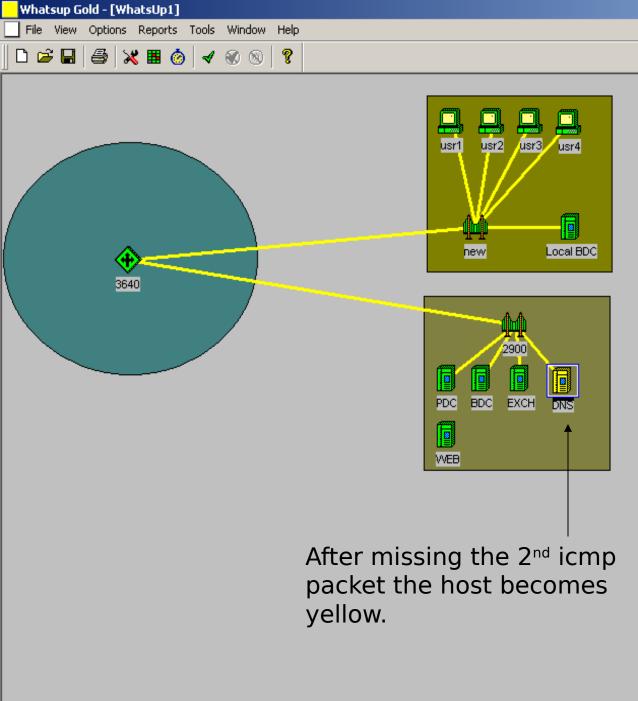
Determine which services are running on that device (such as HTTP, SMTP,POP3, DNS) What services to monitor- Whats Up Gold monitors a service by communicating with the default port that the service runs on.

WHATS UP GOLD
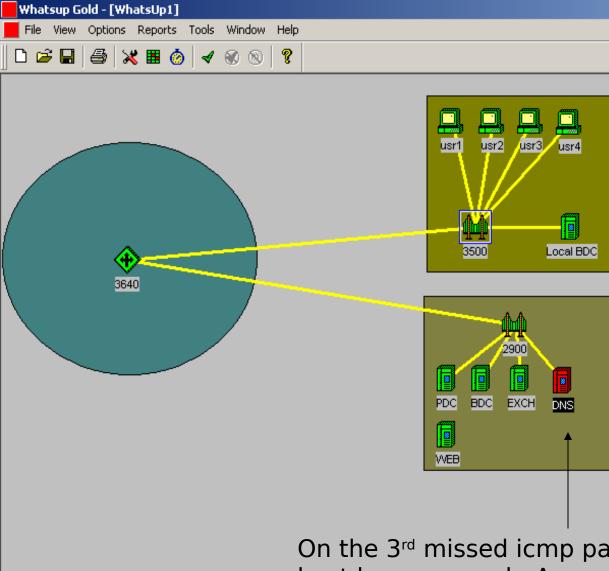
Adding a Host to What's up Gold

After missing the 2nd icmp packet the host becomes yellow.
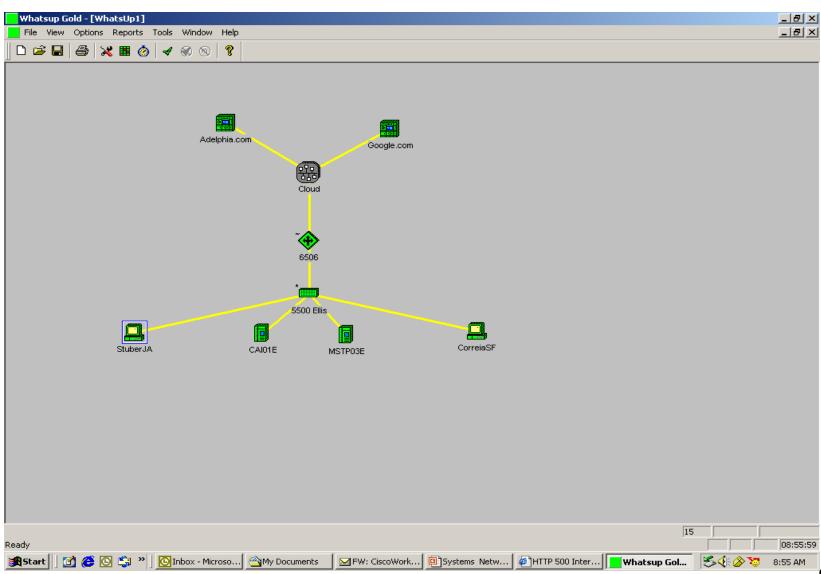
On the 3rd missed icmp packet the host becomes red. A sound notification sounds an alarm when a device or service goes down.
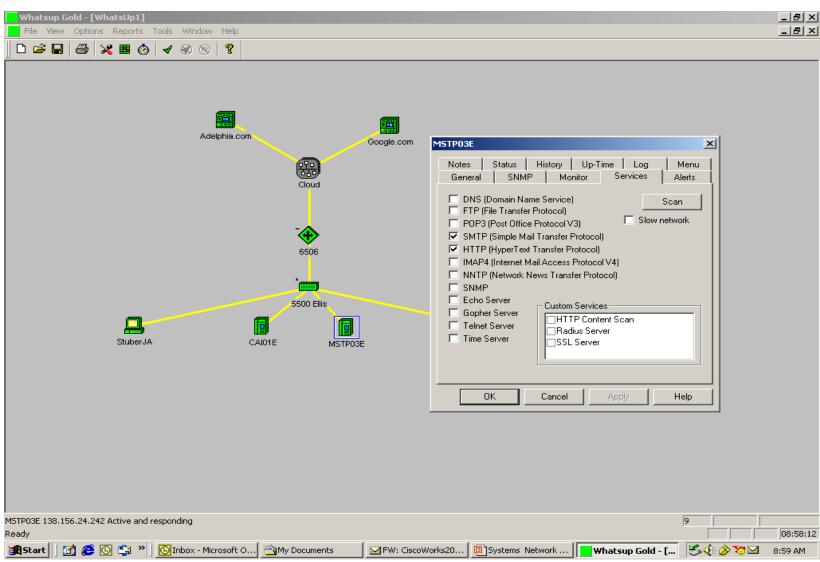
WHATS UP GOLD

WHATS UP GOLD

WHATS UP GOLD

Using Net Tools

Address Range

Resolve Names

WHATS UP GOLD
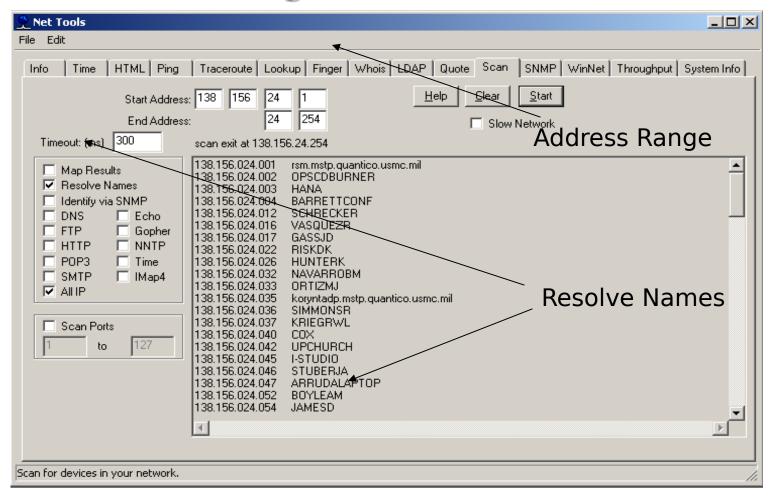
Two types of information
Device Status

Statistics

WHATS UP GOLD

REPORTS
   Performance Graphs. Show devices by best or worst performance based on aggregated polling statistics.
   Event Reports. Show device up and down events, service up and down events, and WhatsUp Gold events such as map open and close.
   Statistics Reports. Show the accumulated polling statistics by device.

WHATS UP GOLD

Daily Performance Data
Map name: MSTP
Period: June 23, 2002 to June 29, 2002
Report Date: Wed Jul 03 09:08:18 2002

MSTP Web Server:

|	AvgRTT	AvgMaxRTT	StdDeviation	AvgMinRTT		%Missed
2002/06/23	0	15	7.68	0	0.17	24
2002/06/24	1	29	10.52	0	0.29	24
2002/06/25	2	34	11.28	0	0.04	24
2002/06/26	2	36	11.63	0	0.08	24
2002/06/27	1	23	9.41	0	0.17	24
2002/06/28	1	32	11.05	0	0.21	24
2002/06/29	1	23	9.47	0	0.00	24
7 Day Avg	1	27	8.79	0	0.14	7

WHATS UP GOLD

MSTP Downtime Summary

Period: June 23, 2002 to June 29, 2002
Report Date: Wed Jul 03 09:05:18 2002

Device	Total Outages	Downtime (days:hours:minutes)
MSTP Web Server Device Downtime	21	21
MSTP-MDS Device Downtime	1	02
MSTP06 Device Downtime	1	01

WHATS UP GOLD

MSTP

QUESTIONS?